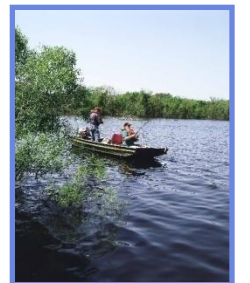
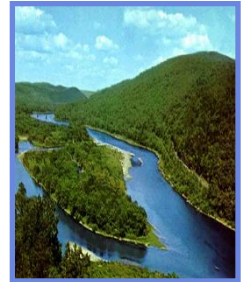


# Southern Cumberland Plateau - Water Supply Plan Modeling

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# Overview

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- Review of model schematic
- Review of model inputs
  - Demands
  - Operating policies
  - Reservoir setup
- Preliminary model output

# Review of Model Inputs - Demands Used

Utility	Average Daily Demand
Big Creek	0.765 mgd
Cagle/Fredonia	0.14 mgd (from Big Creek – assumes 0.03 mgd offset from Harrison Mt. project)
Griffith Creek	0.065 mgd (from Big Creek)
Tracy City	0.35 mgd
Foster Falls	0.45 mgd (from Tracy City)
Monteagle	0.4 mgd (0.05 mgd from Tracy City)
Sewanee	0.325 mgd

- Not using emergency interconnects
  - Big Creek to Tracy City to Monteagle
  - Sewanee to Monteagle

# Big Creek Operations Summary

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- Big Creek Lake used to supply Big Creek demand
- Big Creek Lake also used for sales to Cagle/Fredonia and Griffith Creek

# Big Creek Lake Setup

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- Top of dam = 1827 ft
- Normal pool elevation = 1825.5 ft
- Normal pool storage = 300 MG
- Normal pool area = 83 acres
- Bottom elevation = 1799.25
- Assume all storage is usable

# Tracy City Operations Summary

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- Big Fiery Gizzard Reservoir used to supply Tracy City demand
- Big Fiery Gizzard Reservoir also used for sales to Foster Falls and Monteagle
- 1 cfs minimum release from the reservoir

# Big Fiery Gizzard Res. Setup

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- Top of dam = 1832 ft
- Normal pool elevation = 1829.7 ft
- Normal pool storage = 200 MG
- Normal pool area = 61 acres
- Lowest intake elevation = 1804 ft
  - 2 MG below this elev.
- Total usable storage = 198 MG
- Bottom elevation = 1802 ft

# Monteagle Operations Summary

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- Laurel Lake used to as primary supply for Monteagle demand
- Only withdraw from Lake Louisa when usable storage in Laurel is depleted
- Purchase 0.05 mgd from Tracy City when available

# Laurel Lake Setup

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- Top of dam = 1826.6 ft
- Normal pool elevation = 1822 ft
- Normal pool storage = 91.24 MG
- Normal pool area = 28.7 acres
- Assume all storage is usable
- Bottom elevation = 1775 ft

# Lake Louisa Setup

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- Top of dam = 1852 ft
- Normal pool elevation = 1850 ft
- Normal pool storage = 212.8 MG
- Normal pool area = 48 acres
- Bottom elevation = 1822 ft
- Assume all storage is usable

# Sewanee Operations Summary

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- No explicit policy for operating Lakes O'Donnell and Jackson
- As a placeholder:
  - Withdraw from O'Donnell to meet demand
  - Pump from Jackson to O'Donnell when O'Donnell drops to 80% of usable storage
  - Use pumping rate of 0.5 mgd
  - No withdrawals from Dimmick

# Lake O'Donnell Setup

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- Top of dam = 1900 ft
- Normal pool elevation = 1897.4 ft
- Normal pool storage = 59.96 MG
- Normal pool area = 21 acres
- Lowest drawdown elevation = 1879.4 ft
  - 4.14 MG below this elev.
- Total usable storage = 55.82 MG
- Bottom elevation = 1874.2 ft

# Lake Jackson Setup

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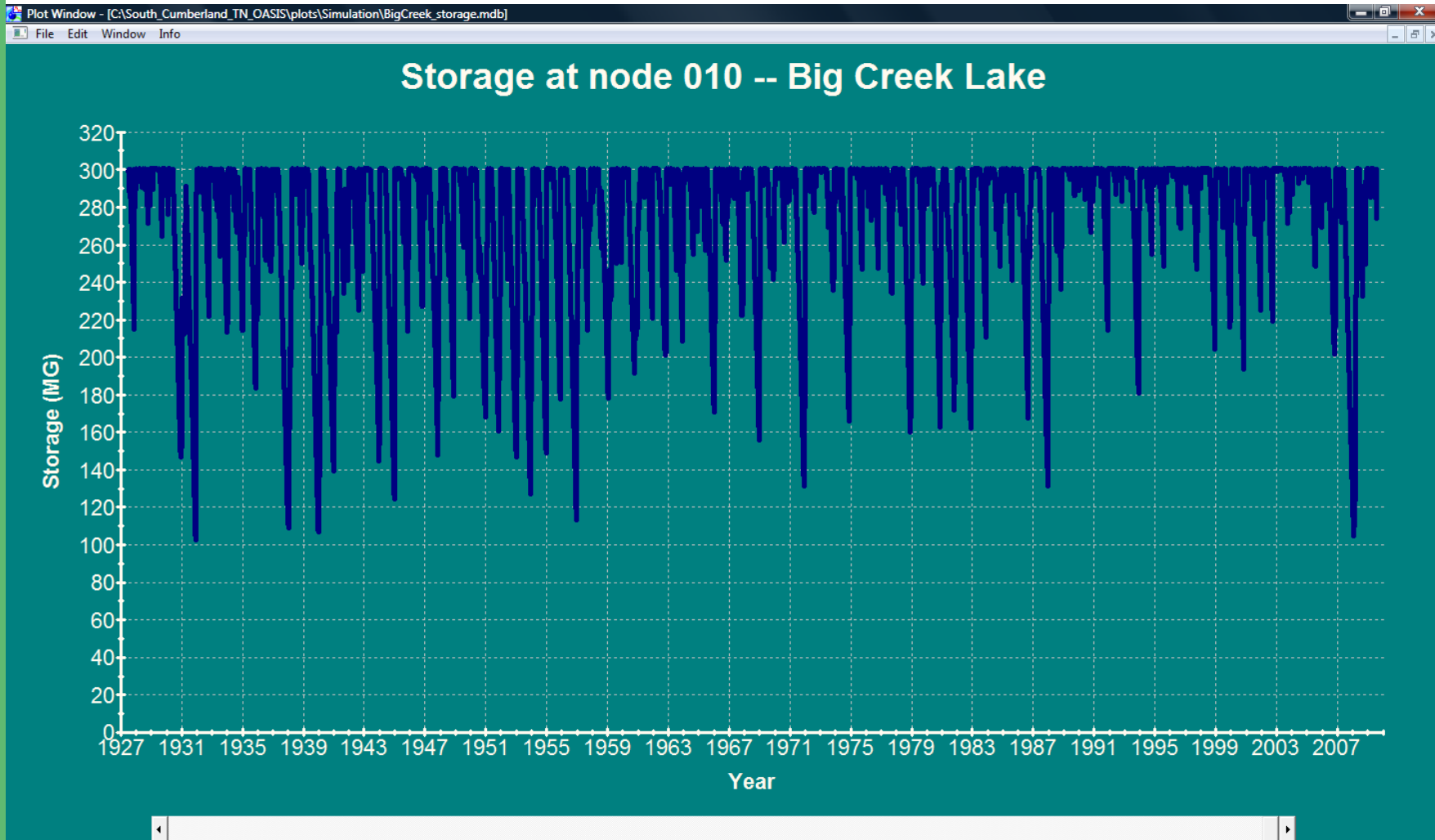
- Top of dam = 1857.3 FT
- Normal pool elevation = 1850 ft
- Normal pool storage = 149.89 MG
- Normal pool area = 22 acres
- Lowest drawdown elevation = 1836 ft
  - 36 MG below this elev.
- Total usable storage = 113.89 MG
- Bottom elevation = 1807 ft

# Lake Dimmick Setup

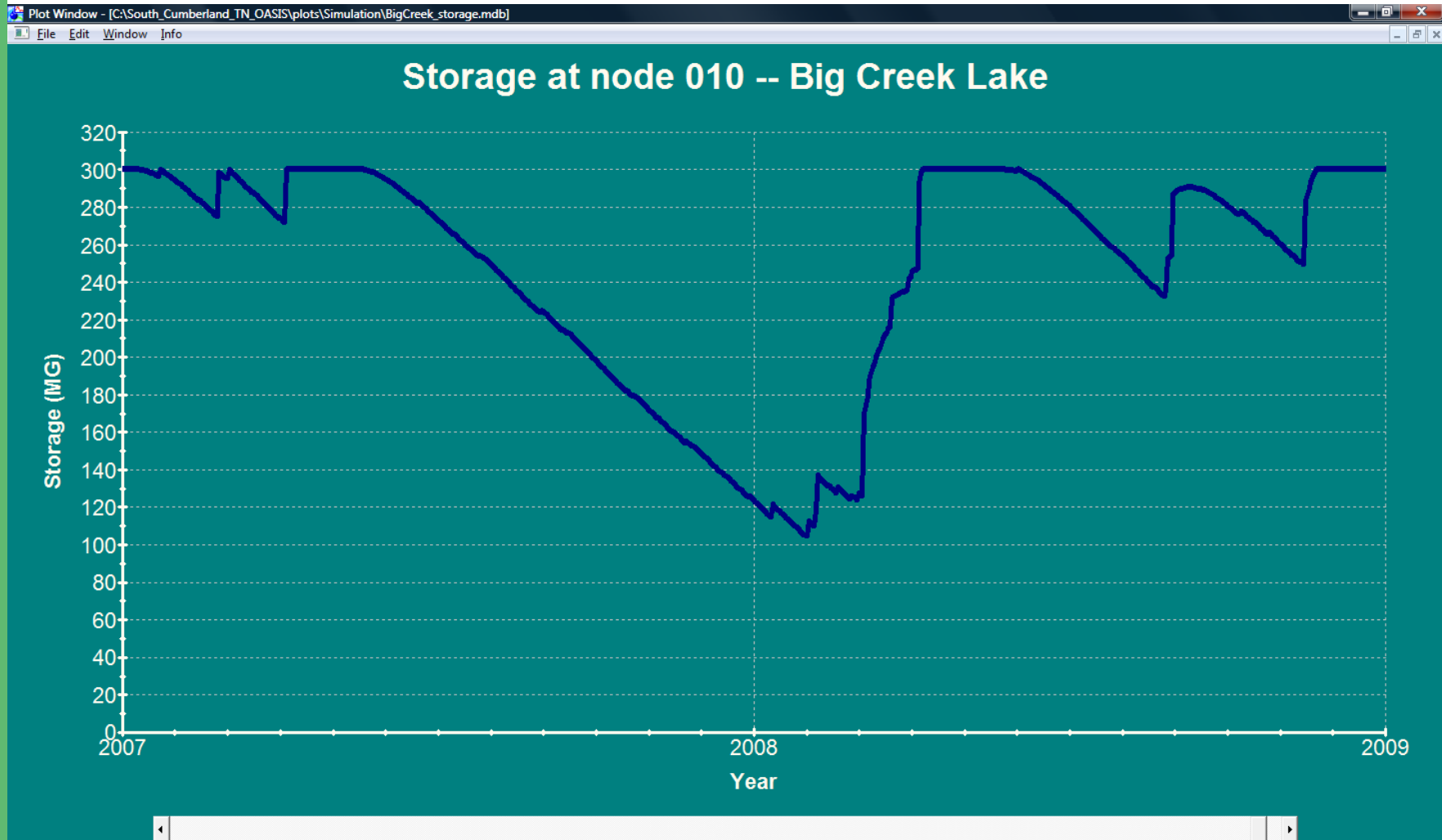
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- Top of dam = 1809.5 ft
- Normal pool elevation = 1799.75 ft
- Normal pool storage = 392.65 MG
- Normal pool area = 89 acres
- Lowest drawdown elevation = 1797.75 ft
- Total usable storage = 51.25 MG
- Bottom elevation = 1775.75 ft

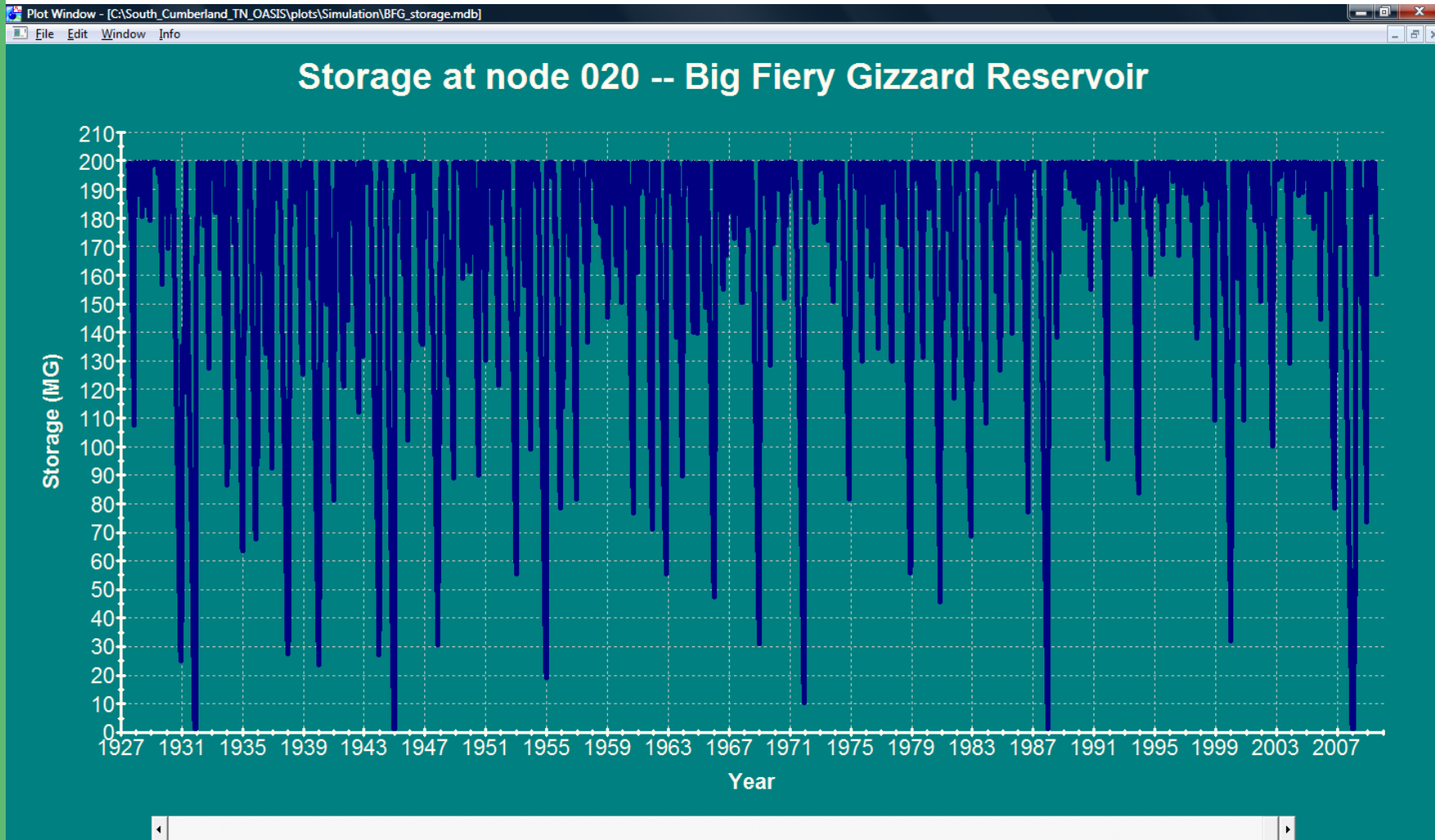
# Simulated Big Creek Lake Storage for Period of Record



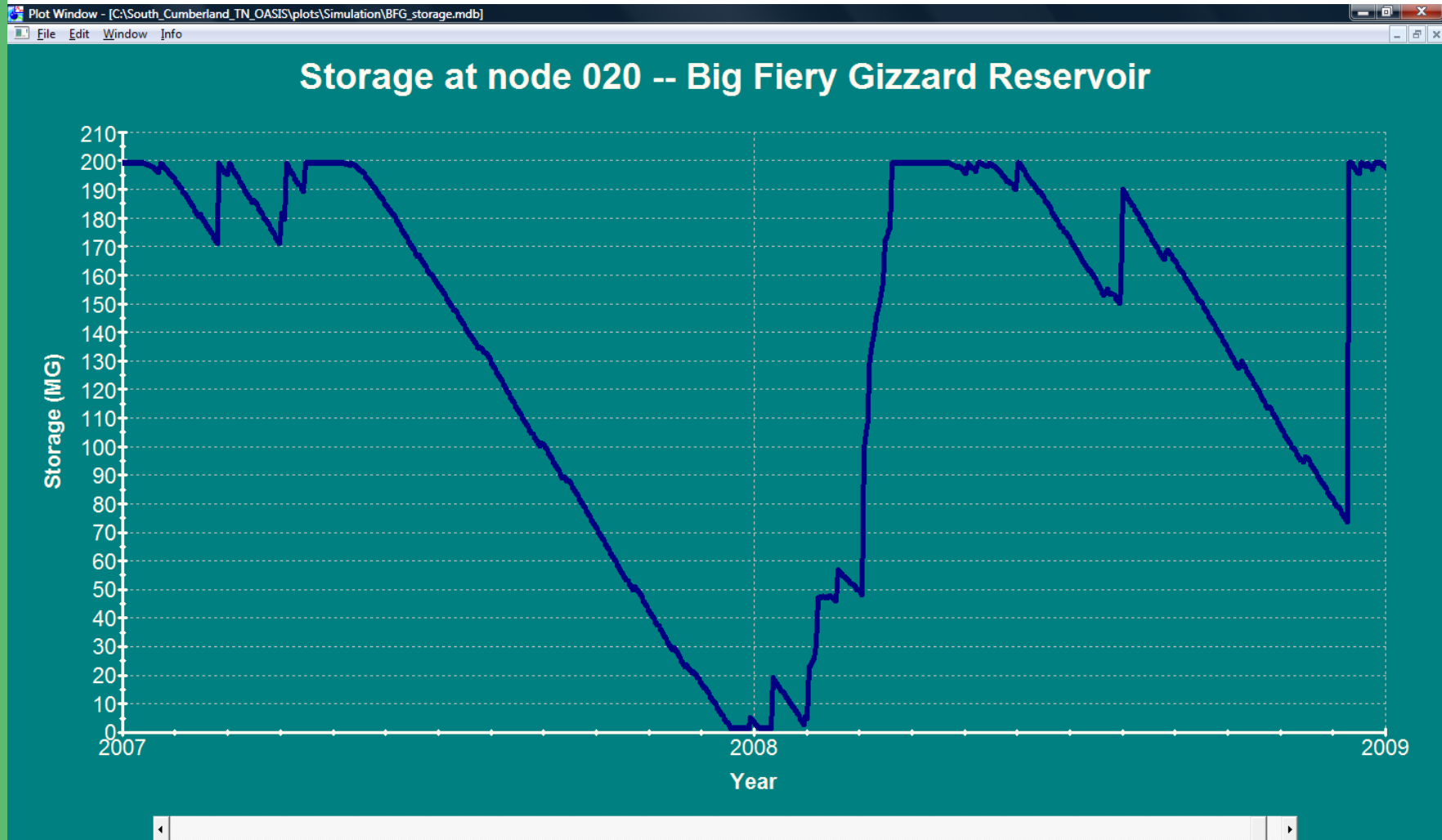
# Simulated Big Creek Lake Storage for 2007 Drought



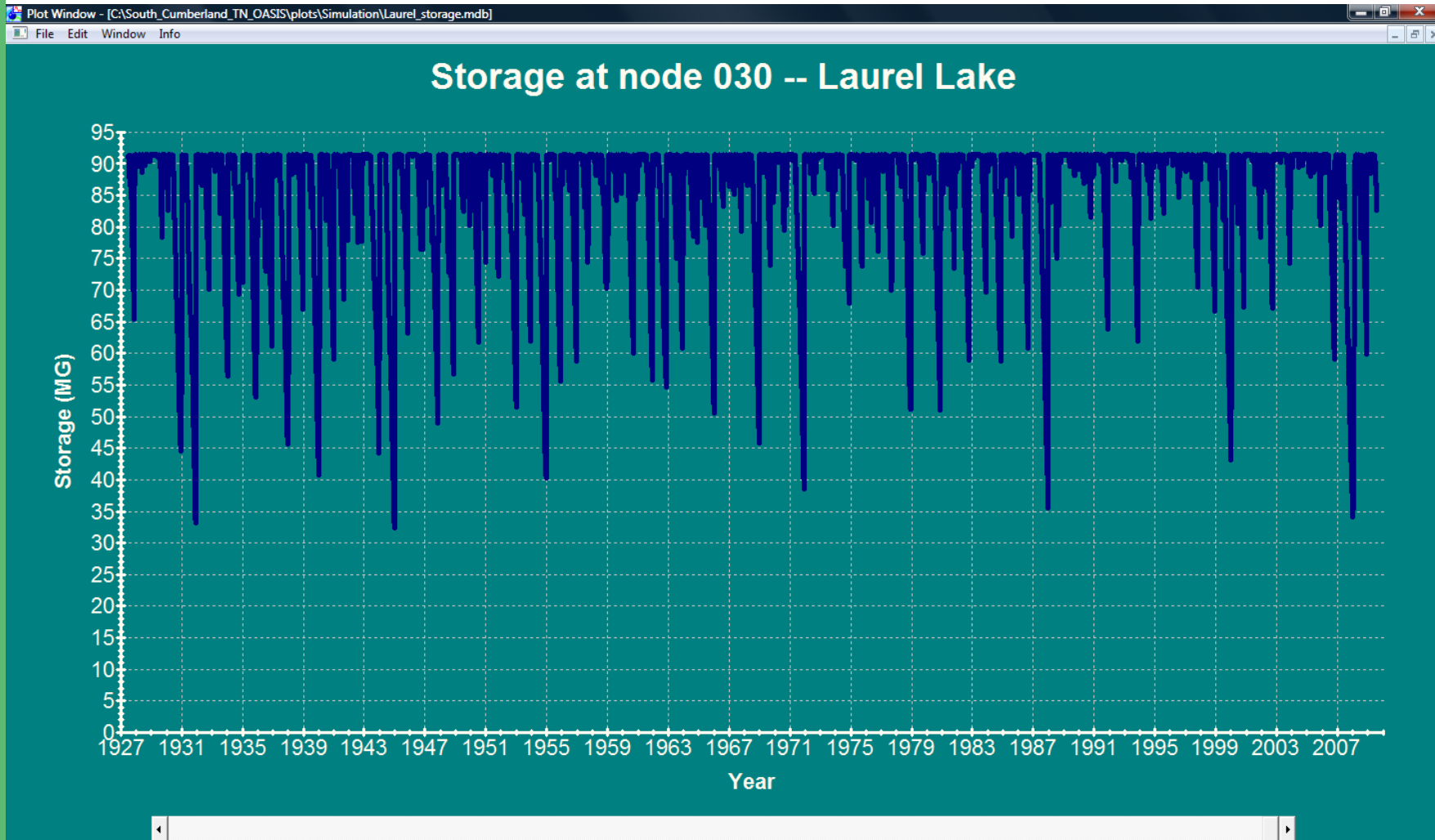
# Simulated Big Fiery Gizzard Reservoir Storage for Period of Record



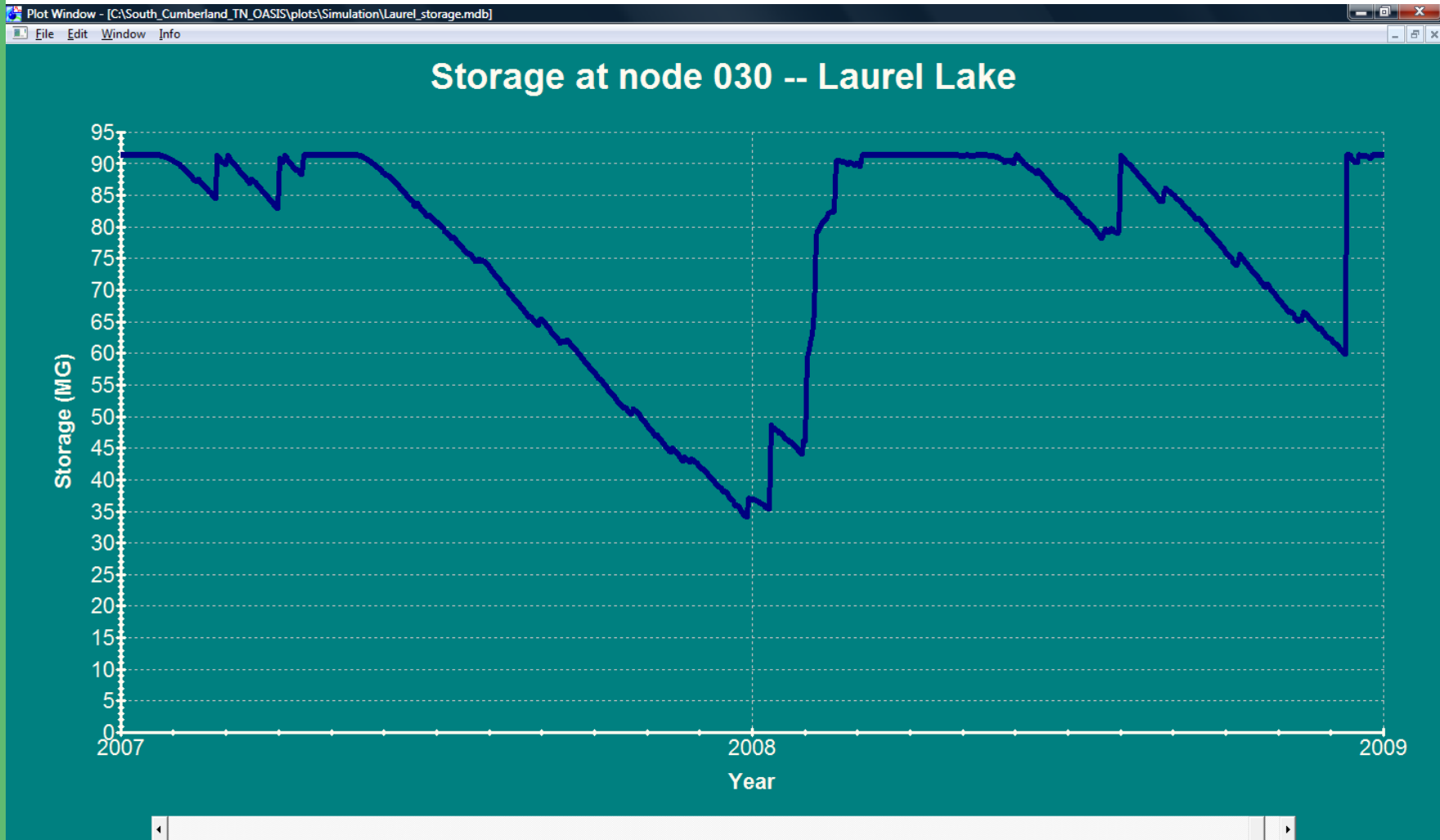
# Simulated Big Fiery Gizzard Reservoir Storage for 2007 Drought



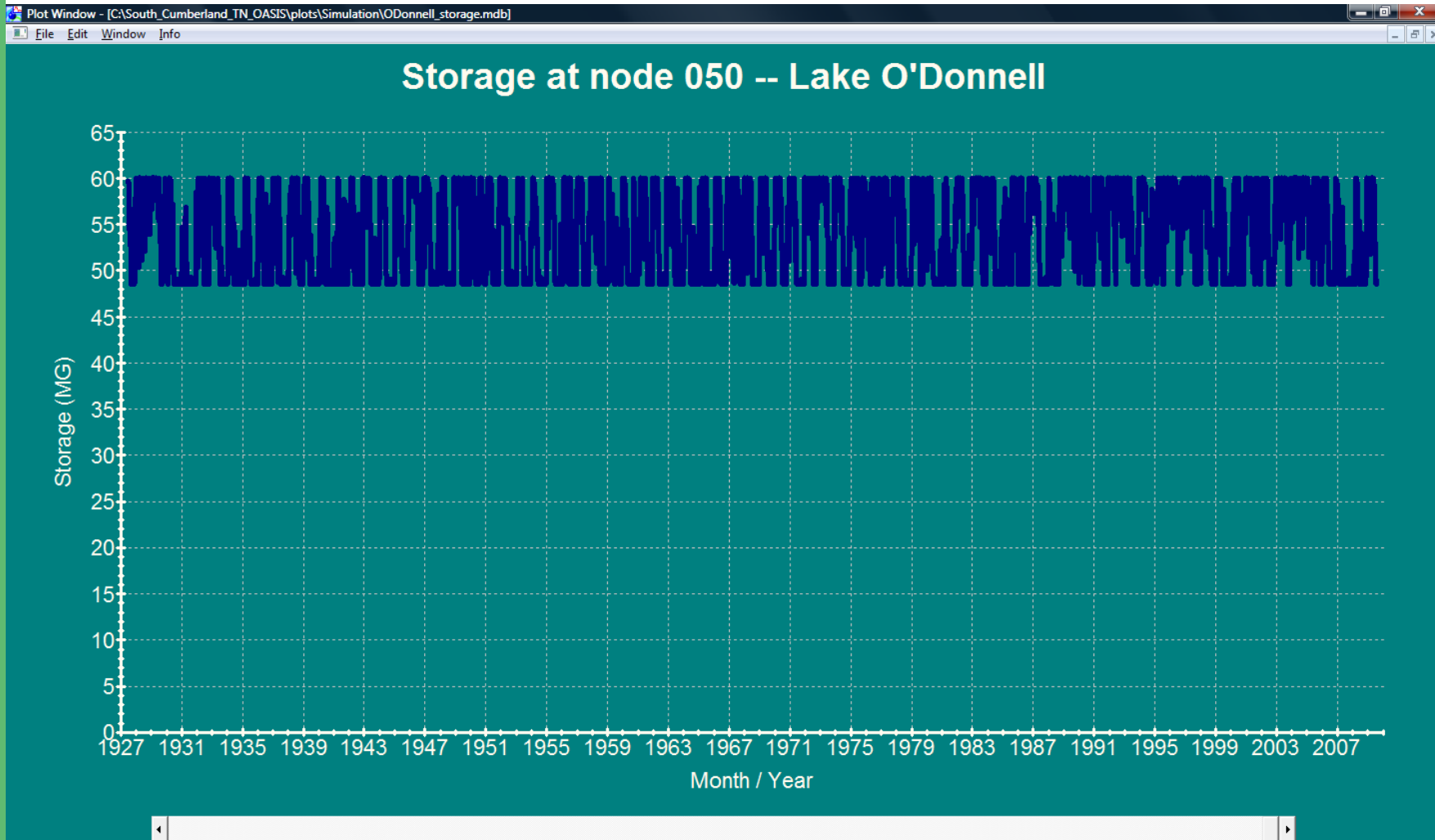
# Simulated Laurel Lake Storage for Period of Record



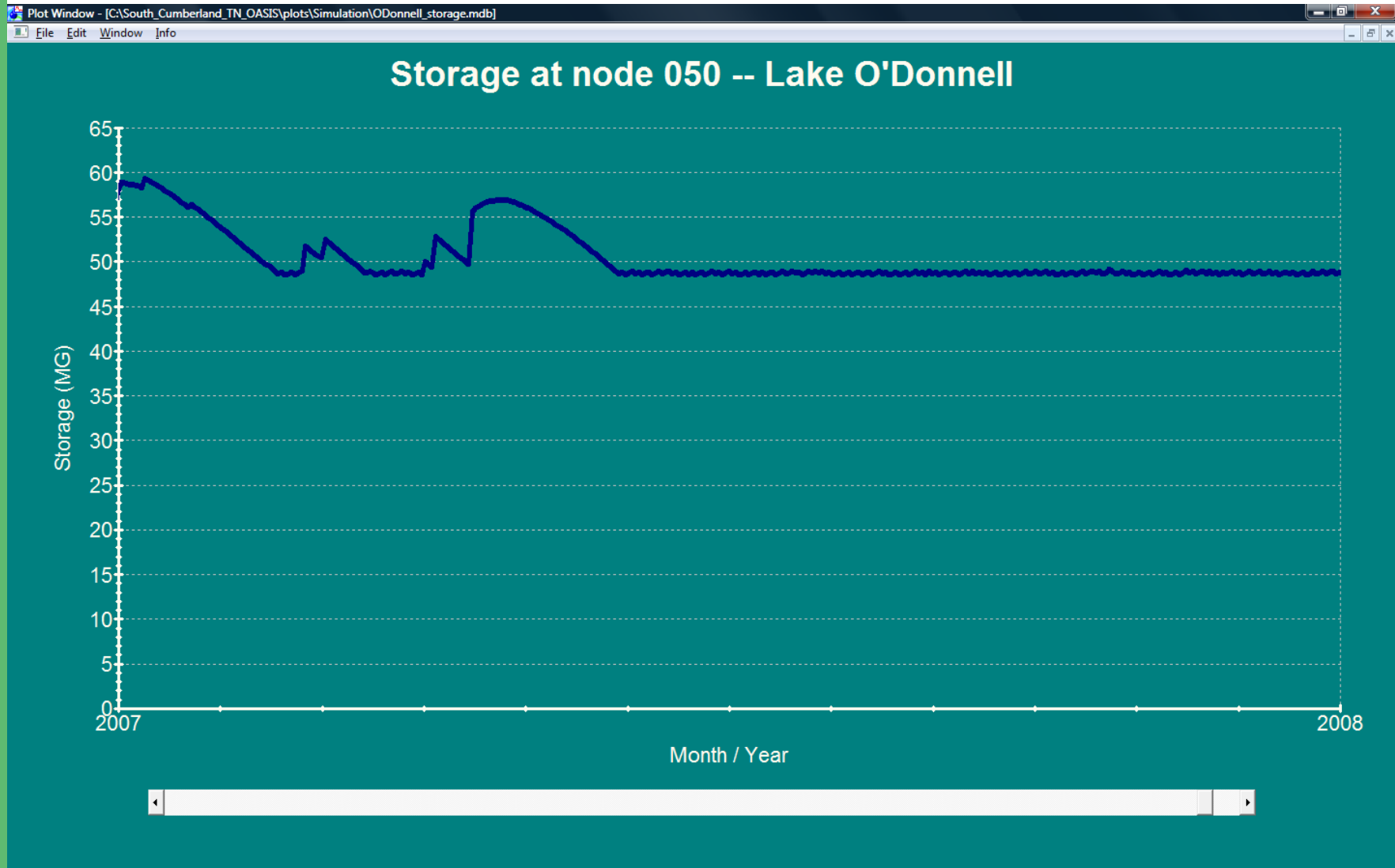
# Simulated Laurel Lake Storage for 2007 Drought



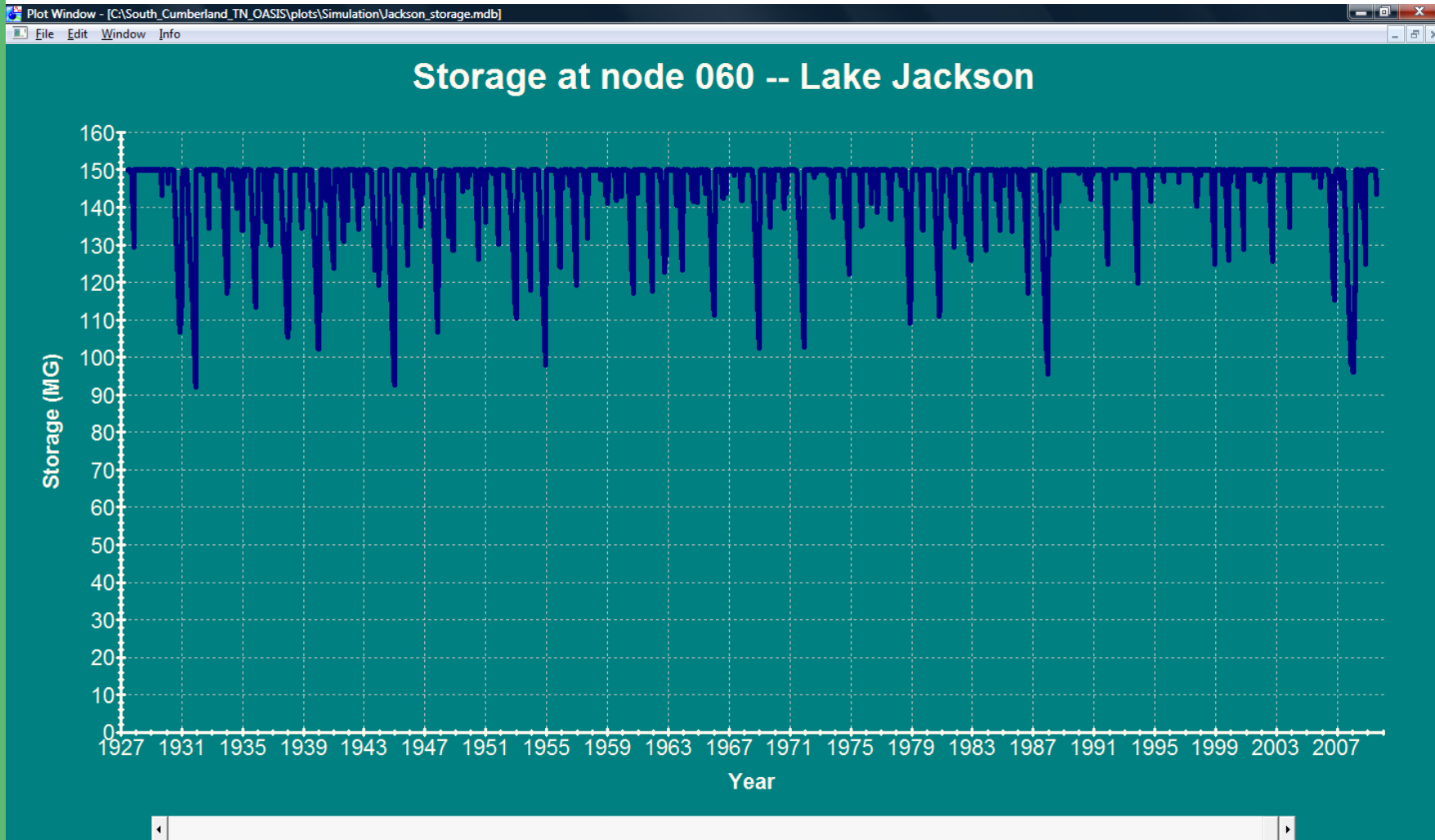
# Simulated Lake O'Donnell Storage for Period of Record



# Simulated Lake O'Donnell Storage for 2007 Drought



# Simulated Lake Jackson Storage for Period of Record



# Simulated Lake Jackson Storage for 2007 Drought

